**T08D01 - Acid-Base Titration Practice**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions: Show HOW you got the answer not just the answer. Put the data into the formula(s), and then show the answer(s). Write the equation first to determine the ratio needed in the titration.

1. If 20.0 mL of a 3.0 M solution of NaOH is required to neutralize 30.0 mL of an acetic acid solution, what is the molarity of the acetic acid?

2. What is the molarity of a KOH solution if 40.0 mL is necessary to neutralize 20.0 mL of a 2.0 M hydrochloric acid solution.

3. How many **grams** of KOH are required to neutralize 200.0 mL of a 4.0 M hydrochloric acid solution?

4. How many liters of 1.5 M carbonic acid are needed to neutralize completely 120.0 g of NaOH?

5. Complete the following chart:

**ACID BASE**

**concentration volume concentration volume**

0.25 M HCl 30.00 mL \_\_\_\_\_\_M NaOH 25.00 mL

0.50 M HNO3 \_\_\_\_\_\_ 0.75 M KOH 20.00 mL

0.40 M HCl 35.00 mL 1.00 M LiOH \_\_\_\_\_\_

6. In a laboratory experiment involving the neutralization of vinegar (acetic acid solution) using 0.50 M NaOH, the following data were collected:

Trial Number Volume of Vinegar Volume of base

1 10.00 mL 17.59 mL

2 15.27 mL 28.39 mL

3 20.14 mL 36.58 mL

Calculate the molarity of the acidic solution along with its density.